



2.5" SATA SSD

Enterprise Series



SSDs with Enterprise-Grade Endurance and Reliability

Synology SAT5200 Series SSDs offer consistent I/O performance, low latency, and enterprise-tier endurance. These drives are built to handle mixed and intensive 24/7 enterprise workloads while offering a seamless storage experience on Synology systems. SAT5200 SSDs feature advanced lifetime analytics¹ and are backed by Synology's 5-year limited warranty.²

Highlights

- **Stable High Performance**
Stable performance of up to 50,000 4K random write IOPS for demanding I/O operations³
- **Enterprise-Grade Endurance**
Suitable for intensive and mixed storage workloads with over 10,000 TBW⁴
- **Robust Data Protection**
End-to-end data protection and power loss protection prevent data corruption
- **Lifetime Analytics**
Analytics provide a clear overview of disk lifespan to empower informed decisions regarding upgrades and replacements¹
- **Built for Synology Systems**
Proven interoperability through rigorous validation and automatic firmware updates via Synology DSM⁵

Stable Performance for Demanding Workloads

Engineered for demanding workloads such as multimedia post-production, online transaction processing (OLTP) databases, and virtualization deployments, Synology SAT5200 SSDs improve the performance and responsiveness of I/O intensive applications. They allow firms to modernize their existing storage infrastructure and boost performance at a competitive per-unit cost.

Enterprise-Grade Endurance and Data Protection

Synology SAT5200 SSDs are built to withstand 24/7 intensive and mixed workloads in all-flash storage and cache applications with an enterprise endurance of over 10,000 TBW.⁴ SAT5200 SSDs support end-to-end data protection to safeguard data integrity over the entire transfer path. Power loss protection circuit design prevents data corruption. Dedicated capacitors provide power to flush data-in-flight into NAND flash in a power loss event and firmware is designed to enable a correct restart on the next power-up.

Real-World Workload Analytics

Full integration with **Synology DiskStation Manager (DSM)** allows Synology systems to provide lifetime analytics³ based on actual workloads for each SAT5200 drive. Timely notifications allow you to plan further ahead for uninterrupted system performance and longevity.



Purpose-Built for Synology Systems

Synology SAT5200 drives are thoroughly tested for compatibility with our systems following each engineering change, while firmware and component changes are strictly managed. Firmware updates can be installed through Synology DSM at a touch of a button.⁵ Intensive I/O stress, power cycling, and temperature trials ensure that all products meet our strictest standards for quality and reliability.

Technical Specifications

Hardware specifications

Capacity	480 GB	960 GB	1920 GB	3840 GB	7000 GB
Model number	SAT5221-480G	SAT5220-960G	SAT5221-1920G	SAT5221-3840G	SAT5210-7000G
Form factor	2.5" 7 mm				
Interface	SATA 6 Gb/s				
Performance ^{6,7}					
Sequential read (128 KB, QD32) ³	500 MB/s	530 MB/s	500 MB/s	530 MB/s	530 MB/s
Sequential write (128 KB, QD32) ³	500 MB/s				
Random read (4 KB, QD32) ³	90,000 IOPS	98,000 IOPS	90,000 IOPS	97,000 IOPS	97,000 IOPS
Random write (4 KB, QD32) ³	30,000 IOPS	44,000 IOPS	30,000 IOPS	50,000 IOPS	50,000 IOPS
Endurance and Reliability					
Terabytes Written (TBW) ⁴	>900 TB	>1,700 TB	>3,500 TB	>7,000 TB	>10,000 TB
Mean Time Between Failures (MTBF) ⁸	1,500,000 hours				
Uncorrectable Bit Error Rates (UBER)	<1 sector per 10 ¹⁷ bits read				
Power loss protection	Yes				
Warranty ²	5 years				
Power Consumption					
Supply voltage	5 V (± 5%)				
Active read (Typ.)	3 W	2.3 W	4.5 W	4.5 W	3.3 W
Active write (Typ.)	3.5 W	3.2 W	5 W	5 W	5.1 W
Idle power average	1.2 W	1.3 W	1.2 W	1.2 W	1.8 W
Temperature					

Operating temperature	0°C to 70°C (32°F to 158°F)
Storage temperature	-40°C to 85°C (-40°F to 185°F)
Others	
Size (H x W x D)	7 mm x 69.85 mm x 100 mm
Certification	FCC, CE, EAC, BSMI, VCCI, KC, RoHS, UKCA

Note: Model specifications are subject to change without advance notice. Please refer to www.synology.com for the latest information.

1. Lifetime analytics are available in DSM 6.2.3-25426 and above.
2. The warranty period starts from the purchase date as stated on your receipt of purchase. The 5-year limited warranty provides coverage until the end of the warranty period or until the endurance usage of the drive has been reached, whichever comes first. [Learn more](#) about our limited product warranty policy.
3. Performance measured using FIO on Linux with Queue Depth 32 (128 KB = 131,072 bytes; 4 KB = 4,096 bytes).
4. The TBW specifications denote the baseline endurance levels for Synology SSDs and are calculated using the JESD219A enterprise workload.
5. One-click firmware updates are available in DSM 6.2.4-25556 and above.
6. The specifications have undergone thorough review and verification by Synology to ensure they meet the performance demands and compatibility standard of each Synology system while providing high reliability.
7. All performance measurements refer to sustained performance achieved in a steady state, as defined by test specifications in accordance with the Storage Networking Industry Association (SNIA). Performance specifications represent single-unit SSD results obtained from Synology's testing environment; actual performance may vary depending on the host system's hardware and software configuration.
8. Mean time between failures (MTBF) is not an estimate or guarantee of product life. It is a statistical value related to mean failure rates for a large number of products and may not accurately reflect actual operation. Actual operating life of the product may be different from the MTBF.

Safety Information



Waste Electrical and Electronic Equipment recycling (WEEE)

The following information is only for EU-member states:

The use of the symbol indicates that this product may not be treated as household waste. By ensuring this product is disposed of correctly, you will help prevent potential negative consequences for the environment and human health, which could otherwise be caused by inappropriate waste handling of this product. For more detailed information about recycling this product, please contact your local city office, household waste disposal service, or the shop where you purchased the product.



Electrostatic Discharge Warning

Storage drives are susceptible to damage from electrostatic discharge (ESD) during handling. To protect against ESD, take appropriate measures when handling or installing drives. Ensure you are grounded using, e.g., an anti-static wrist wrap and refrain from touching connectors or the circuit board.

SYNOLOGY INC.

© 2024, Synology Inc. All rights reserved. Synology, the Synology logo are trademarks or registered trademarks of Synology Inc. Other product and company names mentioned herein may be trademarks of their respective companies. Synology may make changes to specification and product descriptions at anytime, without notice.

SAT5221-2024-ENU-REV001